intervention, and continued monitoring is then prepared and communicated with the primary SCT physician as well as the community oncologist. This information, as baseline data has also identify previously undetected problems and helped us design research studies to improve the patient's health and quality of life after transplant. At subsequent survivorship visits (6 months, 12 months, 18 months and 24 months), the NP repeats the evaluation, collects time specific data and structures the educational component to build on the previous information. This clinic is an important method to provide education for empowerment, promote wellness, identify problems early, intervene quickly, and provide communication and direction to community health care providers to positively impact a long, healthy, happy survivorship journey for our patients.

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IMPROVING THE STEM CELL TRANSPLANT FINANCIAL PROCESS: REORGANIZING THE PATIENT ACCESS CENTER FROM A DISEASE SPECIFIC DESIGN TO A PHYSICIAN SPECIFIC DESIGN

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At one of the largest stem cell transplant (SCT) centers in the country, the complexity of the SCT financial process is highly challenging. The SCT Patient Access Center was established to ensure single point accountability for the financial process and consists of the new patient referral team and returning team assigned by diagnosis. The diagnosis specific design led to several challenges including: 1) confusion on whom to contact in the Patient Access Center 2) inconsistent follow-up on financial information 3) confusing phone list 4) inconsistent communication to the patient on their financial status. This was determined by a survey that was completed prior to the reorganization. To enhance patient satisfaction and improve communication, reorganization to a physician specific design was created. The Patient Access team is composed of Patient Access RN Coordinators (PACs) who are clinical resources for the Patient Access Specialists (PASs) who are experts in financial processing. A PAC /PAS is assigned to the physician specific team and attend tracking meetings to discuss financial information and serve as the contact person for pre-transplant and post-transplant patients requiring authorization for SCT services. The roadmap for the reorganization included programming of the new physician specific design in the electronic system, presentation of the new design to the physicians and staff, active SCT patients transferred to a new worklist, updated phone list, pre-survey completed by the staff and post-survey to occur at 3, 6 and 12 months to evaluate effectiveness. The goal of the physician specific design reorganization is to enhance and improve financial communication to the patient and multidisciplinary team. Ultimately, this will lead to a seamless transition for the patient thru the transplant process leading to improved satisfaction.

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INFLUENCE OF NEEDS ON THE LEVEL OF UNCERTAINTY AMONG PRIMARY CAREGIVERS OF HOSPITALIZED PATIENTS FIRST RECEIVING HEMATOPOIETIC STEM CELL TRANSPLANTATION

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The aims of research are investigate (1) the needs and the level of uncertainty among caregivers, whose relative received the first hematopoietic stem cell transplantation (HSCT) in Taiwan, (2) the variation of the needs and the level of uncertainty at different time points, and (3) the effect of needs of caregivers on their level of uncertainty during HSCT hospitalization. It's a descriptive study with longitudinal design. Data was collected by consecutive sampling in two medical centers. 34 dyads of patients and caregivers were interviewed at four time points: (1) the initial 24–48 hours in the isolation ward, (2) 24–36 hours after transplantation, (3) 14–16 days after transplantation, and (4) 24–48 hours before discharge from the isolation ward. Instruments used for caregiver included (1) The Critical Care Family Needs Inventory-Chinese version, (2) Mishel uncertainty in illness scale-BMT caregiver version-Chinese form. Instruments used for patients included (1) M.D. Anderson Symptom Inventory-Taiwan version. (2) Absolute neutrophil counts(ANC) were obtained from the patients' clinical records. The data was analyzed by descriptive statistics and generalized estimation equations(GEE) statistics. The results showed that (1) the most important needs of caregivers are "Reassurance", and then in order of "Proximity", "Information", "Comfort" and "Support". Examination of variation of caregiver needs at different time points by GEE showed that the needs are significant lower at T2 and T3 as compared to T1 and T4; (2) The overall uncertainty among caregivers is highest at T1. As the time passed by and overall uncertainty gradually decreased. The GEE result showed that a significant decreasing trend of uncertainty at different time points; and (3) Multivariate GEE indicated lower ANC and greater symptoms distress of the patients caused higher level of uncertainty in caregivers. The uncertainty was higher in spouse of the patient than other relationships. Controlling for the other influential factors of uncertainty, the effect of needs of caregivers on the level of uncertainty was still significant. Results are indicated different time point during the HSCT hospitalization had enormous influence on the needs and uncertainty among caregivers. We have to evaluate the caregivers' needs and uncertainty to prepare better adjust and reduce the uncertainty. With these efforts, the quality of life of caregivers may be improved to achieve the optimal level.

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BONE MARROW DONATION BETWEEN CHILDREN SIBLINGS: A NATURAL GESTURE OF LOVE

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Apart from the recipient, the experience of bone marrow (BM) transplantation also affects an important person in the process, the related donor. The number of bone marrow transplantation done every year is on the rise. Consequently, the probability that a sibling be solicited to be a donor is high. The act of giving bone marrow is not a trivial gesture. In addition with the physical consequences associated with the procedure, BM donation represents a significant experience for donors. With many studies looking at the impact of BM transplantation on the recipient, very few have looked at the impact on the donor, particularly when donors are children. The purpose of this longitudinal phenomenologic study was to describe and understand the experience of children siblings that are donors. A total of five siblings, aged between 7 and 18 years old have agreed to participate to semi-structured interviews at two times during the BM transplant process. From the verbatims collected, three central themes emerged: a) *learning that you will be the donor*, b) *living the day of donation* and c) *worrying about the success of the transplant*. The essence of this experience is *to pose a natural gesture of love for a member of his/her family while showing courage in front of this out of the ordinary experience*. These results bring a significant impact for nursing since it provides a better understanding of the experience of siblings that are BM donors. Knowing that nurses plays a significant role in the preparation of the donors, the findings will permit a better personalization of their approach. We believe that the preparation to BM donation should begin before the HLA typing and continue during a long period of time specially if transplant is unsuccessful. Further studies should look at this specific aspect of the experience.

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A RANDOMIZED TRIAL ON THE EFFECT OF A MULTIMODAL INTERVENTION ON PHYSICAL CAPACITY, FUNCTIONAL PERFORMANCE AND QUALITY OF LIFE IN ADULT PATIENTS UNDERGOING ALLOGENEIC STEM CELL TRANSPLANTATION

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Allogeneic hematopoietic cell transplantation (allo-HSCT) is associated with high treatment-related morbidity often leading to adverse changes in physical capacity, functional performance and quality of life (QOL). The aim of this randomized controlled trial was to investigate the effect of a 4–6 week multimodal program of exercise, relaxation and psychoeducation on physical capacity, functional performance and quality of life (QOL) in allogeneic hematopoietic cell transplantation (allo-HSCT) adult recipients. In all, 42 patients were randomized to a supervised multimodal

intervention or to a control group receiving usual care. The primary end point was on aerobic capacity measured in VO2 max. Secondary end points were muscle strength, functional performance, physical activity level, QOL, fatigue, psychological wellbeing and clinical outcomes. The multimodal intervention had a significant effect on physical capacity: V02max ($p < 0.0001$), muscle strength: chest press ($p<0.0001$), leg extension ($p = 0.0003$), right elbow flexor ($p = 0.0009$), right knee extensor ($p<0.0001$) and functional performance (stair test) (0.0008). Moreover, changes in QOL related to functional wellbeing ($p = 0.017$), decreased diarrhea ($p = 0.014$) and decreased days of total parenteral nutrition (TPN) ($p = 0.019$) also reached statistical significance. Longitudinal changes in QOL, fatigue and psychological wellbeing favored the intervention group, but did not reach statistical significance. Assignment of a multimodal intervention during allo-HSCT did not cause untoward events, maintained aerobic capacity and muscle strength, reduced loss of functional performance and functional wellbeing during hospitalization.

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ASSIMILATIVE AND ACCOMMODATIVE BEHAVIORS OF CHILDREN UNDERGOING BONE MARROW TRANSPLANTATION

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The purpose of the study was to explore the experience, assimilative and accommodative behaviors of children undergoing bone marrow transplantation, in the framework of a descriptive qualitative study. Based on the diagram of bone marrow transplantation experiences and the semi-structural interview guide, in-depth interviews were conducted on 11 children who received bone marrow transplantation. Each interview lasted 60–90 minutes and was recorded and later composed into descriptive contexts. Content analysis was further applied to identify and categorize the children's personal experiences, assimilative and accommodative behaviors. From the results of quantifying the qualitative data, a total of 849 experience units were coded. Personal experiences can be categorized in to 3 major aspects, physical experience, therapy experience, and interpersonal experience; and the proportions of each aspect are 38%, 41%, and 21% respectively. The physical experiences include physical perception, physical function, and physical structure. The therapy experiences include the process of medical treatment and the environment of medical treatment. And the interpersonal experiences include interactions with medical staffs, peers, teachers, family members, or being alone. The children's behavioral reactions include assimilative behaviors and accommodative behaviors. The analysis of the interviews shows that assimilative behaviors are in a proportion of 58% and accommodative behaviors 42%. Assimilative behaviors encompass behaviors of identification, comparison, expectation, and evaluation, while accommodative ones contain behaviors of self-preparation, approaching, changing expectations, and expressing emotions. The age of the research subjects and the time between transplantation and interview will affect personal experiences, assimilative and accommodative behaviors. This study provides a reference of clinical nursing care to assist nursing staffs in understanding the subjective perception of children undergoing bone marrow transplantation so that they can provide comprehensive care to make children go through the main development stages in life easily.

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EXERCISE GAMING DURING HOSPITALIZATION FOR PEDIATRIC AND ADOLESCENT/YOUNG ADULT (AYA) PATIENTS UNDERGOING HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT)

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The treatment of childhood malignancies with hematopoietic stem cell transplant (HSCT) is potentially curative. However, the procedure can detrimentally affect a patient's overall well being. The literature demonstrates that one week post HSCT, distress and anxiety peak and physical activity significantly decreases. These changes may be more profound in pediatric and adolescent/young adult (AYA) patients that require reverse isolation. Together, these changes can lead to persistent fatigue, physical deconditioning and reduced ability to engage in activities of daily living. Emerging literature suggests that engaging in physical exercise during admission for HSCT can stabilize a patient's current level of physical performance, prevent further decreases in performance status, improve mood and enhance overall quality of life. With this knowledge, it is imperative that supportive care measures be developed that will counter these negative effects of treatment. We propose that participation in a developmentally appropriate physical activity program throughout hospitalization for HSCT can decrease patient distress and anxiety and maintain their physical performance capacity. Exercise equipment using video gaming technology (Play Station exercise game bikes, dance pads and Nintendo Wii's) to encourage compliance will be provided to pediatric and AYA patients, ages 7–25, hospitalized for HSCT. Patients will be asked to exercise a minimum of 4 days/week for at least 20 minutes/day during their hospitalization. Adherence to the program, use of the equipment and a quality of life measure, the Behavioral, Affective and Somatic Experiences Scale (BASES), will be assessed before transplantation and then weekly during admission. Performance status measures (six-minute walk test and Timed Up and Go) will be administered at admission and prior to discharge. We hypothesize that use of exercise/gaming devices will maintain current performance status and lead to an improved quality of life in these patients.

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IS ASSESSMENT OF PSYCHIATRIC DISTURBANCE ENOUGH?: A COMPREHENSIVE APPROACH TO PSYCHOSOCIAL SCREENING FOR ALLOGENEIC HCT CANDIDATES

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Allogeneic transplantation (allo HCT) is a risky procedure associated with high mortality and morbidity. Sorror et al. have developed a tool to predict nonrelapse mortality (NRM) in these patients and to assist in patient counseling before HCT. They have determined that psychiatric disturbance, defined solely as depression and anxiety, contributes to NRM. At our institution, psychosocial screening is performed by a clinical psychologist and social worker. Patients complete demographic and standardized questionnaires of performance status, anxiety, depression, physical and mental quality of life, coping strategies, personality and mood. A brief cognitive assessment is performed to evaluate intellect, memory, attention, language and psychomotor speed. Semi-structured interviews are conducted to obtain information regarding the patients and familys understanding of transplant, need and availability of a dedicated caregiver, trust in the healthcare team, psychiatric history, substance use, financial and employment issues, sleep and appetite. Using information from interview and testing, patients are assigned a risk level of Low, Low-Moderate, Moderate, Moderate-High or High for having psychosocial issues likely to compromise the transplant, recovery and long-term survival. This information helps to target key issues when counseling patients and their families before HCT. Data are available for 350 allo HCT candidates from 2002 to 2007. Table 1 describes the candidate population.

Allogeneic HCT Candidate Population

Characteristic	Incidence
Male: Female	58% : 42%
Diagnosis of AML, Lymphomas, MDS, Other	35%, 16%, 13%, 38%
Married	65%
Caucasian	78%
High school or greater education	92%
Current tobacco use	12%
Current alcohol use	37%
Current illicit drug use	6%
Psychiatric disturbance of Anxiety, Depression	50%, 33%
Psychosocial risk assignment of Low, Low-Moderate, Moderate, Moderate-High, High	38%, 22%, 28%, 4%, 8%